

**CALIFORNIA ENERGY COMMISSION**

1516 Ninth Street  
Sacramento, California 95814

Main website: [www.energy.ca.gov](http://www.energy.ca.gov)



## Hydrogen Fuel Infrastructure Survey

### Background

During the summer of 2012, the California Energy Commission (Energy Commission) held three public workshops throughout California to discuss 1) techniques for optimizing hydrogen station locations; 2) technical hydrogen fueling station performance; and 3) the future hydrogen fueling solicitation. Upon consideration of the comments received during the workshops, the Energy Commission issued a draft solicitation for public comment on September 7, 2012. The comments received by the Docket [12-HYD-1] are posted online at:

[http://www.energy.ca.gov/altfuels/notices/draft\\_hydrogen\\_pon/comments/](http://www.energy.ca.gov/altfuels/notices/draft_hydrogen_pon/comments/).

Upon consideration of the comments received on the September 7, 2012 draft solicitation, on November 19, 2012, the Energy Commission issued Grant Solicitation PON-12-606, Alternative and Renewable Fuel and Technology (ARFVT) Program, Hydrogen Fuel Infrastructure, a competitive grant solicitation. The solicitation provides grant funds to projects which expanded the network of publicly accessible hydrogen fueling stations to serve the current population of fuel cell vehicles (FCVs) and to accommodate the planned large-scale roll-out of FCVs commencing in 2015. For additional information, please see <http://www.energy.ca.gov/contracts/PON-12-606>.

The Energy Commission is seeking a greater understanding of stakeholder experience, needs, and perspectives related to Energy Commission hydrogen fuel Infrastructure solicitations. This notice requests volunteers to participate in a telephone survey to help gather this information.

Telephone interviews will be conducted July 8, 2013 through August 1, 2013. If you would like to participate please email your email address and phone number to Ms. Sarah Williams [sarah.k.williams@energy.ca.gov](mailto:sarah.k.williams@energy.ca.gov) (916) 651-9866, requesting to be included in the "Hydrogen Fuel Infrastructure Survey." Please use the following in the subject line of your email: Hydrogen Fuel Infrastructure Survey. The interviews are expected to take approximately 45 minutes to one hour and will focus on the following questions and topics. If you are not available during the interview period, but wish to participate at another time, please inform us.

The survey results will be discussed at an Energy Commission workshop in the Sierra Room at the California Air Resources Board, 1001 "I" Street, Sacramento, CA 95814 on August 12, 2013.

## Survey Questions and Topics

### Introduction:

Thank you for participating in our survey. We would like this to be an open discussion so that we can fully understand your experience and suggestions related to hydrogen fueling infrastructure deployment. On August 12, 2013 we will hold a workshop to discuss the aggregate results from this survey.

**Some or all of the following questions and topics may or may not apply to your areas of interest and expertise. Please select those that apply.**

### Workshops and Outreach

- (1) Please describe your experience(s) at the 2012 Workshops and afterwards.
  - a. Was your input heard? Please include specific examples.
  - b. Were your contributions considered in the process?

### September 7, 2012 Draft Solicitation

- (2) If you submitted comments on the September 7, 2012 Draft Solicitation, did the final solicitation (November 19, 2012) incorporate your comments satisfactorily? The final solicitation documents can be found at <http://www.energy.ca.gov/contracts/transportation.html#PON-12-606>.
  - a. Could PON-12-606 have better reflected your comments?
  - b. Do you believe that posting a draft solicitation document for public comment is a good idea?

### November 19, 2012 Final Solicitation, PON-12-606

- (3) Did PON-12-606 meet your expectations?
  - a. In general terms, how could the solicitation have been improved?
- (4) What method(s) would you suggest be used to match station location with customers?
  - a. For PON-12-606 were the Station Location Areas and maps understandable?
  - b. Were the Station Location Areas easy to comply with?
- (5) For PON-12-606, were the maximum award amounts reasonable? If not, what would you suggest, and why?

- a. What about the funding cap? If not reasonable, what would you suggest and why?
  - b. Did the award levels address stakeholder comments at the 2012 workshops? If not, what levels would you suggest and why?
  - c. What about the required match? If the required match was not reasonable, what would you suggest and why?
  - d. Were the operation and maintenance costs (requirements and restrictions) reasonable and useful? How could they be modified?
- (6) For PON-12-606, was the non-road set-aside a reasonable response to workshop presentations outlining the potential/need for such an option?
  - a. Did the non-road set aside reflect stakeholder comments from the summer 2012 workshops and after those meetings?
- (7) Were PON-12-606 requirements for renewable hydrogen, both the requirement of 33% for all projects, and the 100% renewable set aside, reasonable?
  - a. Did they reflect stakeholder input at the summer 2012 workshops?
- (8) For PON-12-606, were the technical requirements (hydrogen quality and dispensing protocols, station capacity, peak fueling capacity, dual dispenser pressure and operational date) for eligible projects reasonable?
  - a. Did these requirements reflect stakeholder input during the summer 2012 workshops?
- (9) For PON-12-606, were the California Environmental Quality Act (CEQA) requirements understandable? (Please see Section X.I of PON-12-606 for further information. Additional information resides in the correspondence attached to this survey. )
  - a. How could the due dates for CEQA requirements be modified to facilitate more participation?
- (10) If your firm did not apply to PON-12-606, why not? Please be specific.
- (11) If your firm applied, how did you determine the number of station applications / projects?

### **Future Activities**

- (12) What is necessary to increase participation in the next hydrogen fuel infrastructure solicitation?
  - a. What kind of assurance(s) can the state provide to increase participation?
  - b. How does the existing solicitation process play a role in the participation?

- c. Would performance-based grants that guarantee operations and maintenance until profitable increase participation?
- d. What does the industry need to do to accelerate the pace of hydrogen fuel station construction?
- e. How do the eligible project requirements, technical requirements, eligible costs, operation and maintenance costs, and match funding requirements impact participation?

June 28, 2013

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John Butler, Office Manager

Mail Lists: AltFuels, Transportation, Opportunity

Correspondence Sent from the California Energy Commission to Cities and Counties about CEQA  
(sent December 3, 2012)

To Whom It May Concern:

The California Energy Commission's Alternative and Renewable Fuel and Vehicle Technology (ARFVT) Program recently released a grant solicitation that invests roughly \$30 million to fund the construction of 15-20 hydrogen fueling stations throughout California. Together with six already existing and planned stations, this investment will help build a hydrogen fueling station network that will support early commercialization of zero-emission fuel cell vehicles.

Your jurisdiction is one of 25 station location areas contained in the grant solicitation. The intent of this letter is to inform your jurisdiction about hydrogen fuel technology and provide context for the projects that may request permits from your agency.

Hydrogen is one of several emerging transportation fuels. Hydrogen fuel is typically produced either from water through electrolysis or from natural gas or biomethane through a steam methane reformation process. Hydrogen-powered fuel cell vehicles are zero-emission vehicles and can reduce greenhouse gases and criteria air pollutants. Fuel cell vehicles have zero tailpipe emissions, and emissions generated at the fueling station and during fuel production are small. The Energy Commission's funding of hydrogen fueling stations will help California meet the state's goals for greenhouse gas reductions, air quality improvement, petroleum displacement, and alternative fuels use.

Fuel cell vehicles function much like conventional vehicles for everyday personal transportation. Several major automakers have fuel cell vehicles available on the market. However, fuel cell vehicle deployment is hindered by the lack of publicly-accessible fueling stations. Fueling at hydrogen stations is similar to fueling at natural gas fueling stations, but at somewhat higher pressures. Equipment for these stations normally includes storage tanks, compressors and dispensers, most of which are located in steel enclosures. The station setup is designed to provide the user with an experience similar to today's traditional gasoline station experience. The Energy Commission solicitation proposes funding hydrogen stations that are located at existing retail fueling stations.

Today, hydrogen fuel is produced either at large-scale steam methane reforming plants (often near oil refineries) and then trucked to the fueling station, or on-site in small electrolysis devices. In either case, the equipment at a hydrogen fueling station is reasonably sized, and most of it is secured in a steel enclosure. This equipment typically consumes no more space than two parking spots. The equipment is usually installed in the back of an existing gasoline station. The dispenser pump used by the consumer looks similar to a conventional gasoline pump.

Hydrogen fueling stations have undergone significant technological evolution and today include the most modern safety features available. The Energy Commission's approval of a grant award will not exempt any project from compliance with the codes, standards and protocols required under local permitting to ensure that the production, storage and dispensing of hydrogen occurs in a safe and controlled manner.

One critical issue in deploying these stations is the environmental review under the California Environmental Quality Act (CEQA). Hydrogen fueling station projects are often exempt under CEQA due to their size, their minimal environmental impacts, and their location at existing retail fueling facilities. The Energy Commission is often faced with short deadlines to award our funding and, in the past, environmental review has been a time-consuming process. Therefore, efficient and timely completion of the CEQA process is an important component of a successful hydrogen program.

For further information about the ARFVT Program's hydrogen grant solicitation, please visit: <http://www.energy.ca.gov/contracts/transportation.html>. If you have any questions, please do not hesitate to contact Tobias Muench at [tobias.muench@energy.ca.gov](mailto:tobias.muench@energy.ca.gov) or (916) 654-4831.